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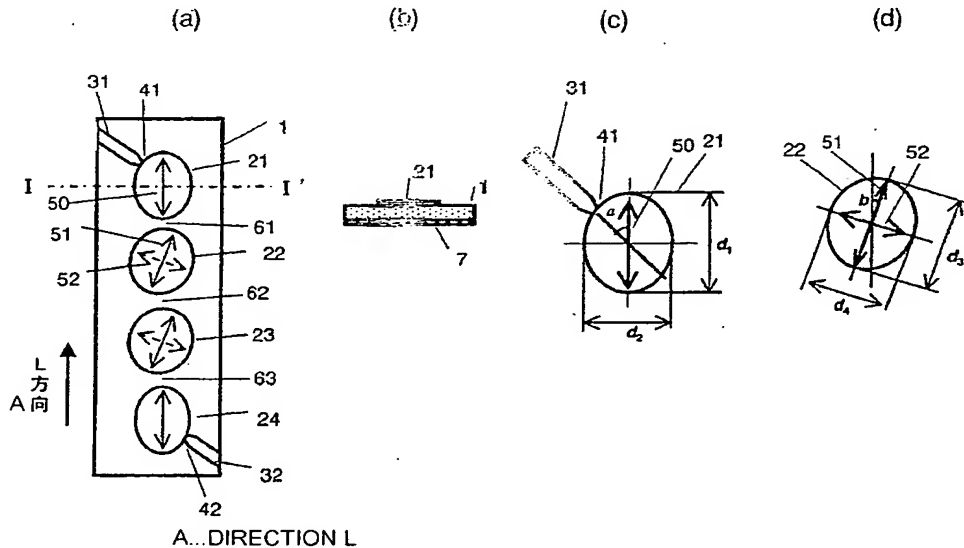
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- (81) 指定国 (表示のない限り、全ての種類の国内保護が可能): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,

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(54) Title: HIGH FREQUENCY CIRCUIT ELEMENT

(54) 発明の名称: 高周波回路素子



(57) Abstract: A high frequency circuit element comprising a substrate having a major surface, and a plurality of resonators including first, second and third resonators arranged to be coupled in series on the major surface of the substrate. The first, second and third resonators are formed, respectively, of conductors supported on the substrate. Each of the first, second and third resonators has a resonance mode including two basic resonance modes oscillating in the directions intersecting perpendicularly in a plane parallel with the major surface of the substrate. The second resonator is interposed between the first and third resonators and the oscillating direction in the basic resonance mode of the second resonator forms an angle between 0° and 90° with respect to the oscillating direction in the basic resonance mode of the first resonator and/or the third resonator.

(57) 要約: 本発明の高周波回路素子は、主面を有する基板と、前記基板の主面上において直列的に結合するように配置された第1共振器、第2共振器、および第3共振器を含む複数の共振器を備えた高周波回路素子である。第1、第2、および第3共振器の各々は、基板に支持された導体から形成されている。第1、第2、および第3共振器の各々の共振モードは、

[続葉有]

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SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US,  
UZ, VC, VN, YU, ZA, ZM, ZW.

NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG,  
CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) 指定国 (表示のない限り、全ての種類の広域保護が  
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CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,

添付公開書類:

— 国際調査報告書

2文字コード及び他の略語については、定期発行される  
各PCTガゼットの巻頭に掲載されている「コードと略語  
のガイダンスノート」を参照。

基板の主面に平行な面内において直交する方向に振動する2つの基本共振モードを含む。第2共振器は、第1共振器と第3共振器との間に配置されており、第2共振器の基本共振モードの振動方向は、第1共振器および/または前記第3共振器の基本共振モードの振動方向に対して0°より大きく90°より小さい角度を形成している。

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/002586

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl.<sup>7</sup> H01P1/208

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.<sup>7</sup> H01P1/20-1/219

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1966 Toroku Jitsuyo Shinan Koho 1994-2004

Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 8-46413 A (Matsushita Electric Industrial Co., Ltd.), 16 February, 1996 (16.02.96), Full text; all drawings & EP 660438 A2	1-8
A	JP 57-155802 A (NEC Corp.), 27 September, 1982 (27.09.82), Full text; all drawings (Family: none)	1-8

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
12 April, 2004 (12.04.04)Date of mailing of the international search report  
27 April, 2004 (27.04.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

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